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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/804,744	03/13/2001	Takashi Usui	7254/64037	2561
7590 05/05/2004				
Cooper & Dunham LLP 1185 Avenue of the Americas New York, NY 10036			EXAMINER WARE, CICELY Q	
			ART UNIT 2634	PAPER NUMBER 5

DATE MAILED: 05/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/804,744

Applicant(s)

USUI ET AL.

Examiner

Cicely Ware

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Specification*

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

2. The disclosure is objected to because of the following informalities:
  - a. Pg. 6, line 25, applicant does not disclose figure number. Examiner assumes Fig. 3
  - b. Pg. 7, lines 16-17, examiner suggests applicant re-write these lines for clarification purposes.
  - c. Pg. 9, line 25, Pg. 10, line 1, examiner suggests applicant place equation number on same page as equation for clarification purposes.
  - d. Pg. 11, lines 5-6, examiner suggests applicant re-write these lines for clarification purposes.
  - e. Pg. 11, line 18, applicant uses the phrase "differ slightly each other". Examiner suggests applicant use "differ slightly from each other".

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f. Pg. 12, line 4, applicant uses the phrase "part gets value". Examiner suggests applicant use "part gets the value" for clarification purposes.

g. Pg. 12, line 14, applicant uses the phrase "can know that signal is". Examiner suggests applicant use "can know that the signal is".

h. Pg. 12, line 19, applicant uses the phrase "there are two problem". Examiner suggests applicant use "there are two problems" for clarification purposes.

i. Pg. 15, line 1, applicant uses the phrase "distinguishing them each other". Examiner suggests applicant use "distinguishing them from each other" for clarification purposes.

j. Pg. 23, line 2, applicant refers to a symbol counter 341. Examiner assumes a symbol counter 41 as referenced in Fig. 27.

k. Pg. 23, line 18, applicant uses the phrase "carrier wave using these data, forms radio". Examiner suggests applicant use "carrier wave using this data, forms a radio" for clarification purposes.

l. Pg. 24, line 25, examiner suggests applicant move this line to Pg. 25.

m. Pg. 31, line 16, applicant uses the phrase "system can be identifies by". Examiner suggests applicant use "system can be identified by" for clarification purposes.

3. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being obvious over Dolle et al. (US Patent 6,160,821) in view of design choice.

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned

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by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

(1) With regard to claim 1, Dolle et al. discloses in (Fig. 3) a digital communication systems wherein a data modulation method comprises the steps of: encoding a transmission data to data symbol (1); inserting the reference symbol in which multiple synchronizing patterns are aligned in time series in order to contain the structure of IA-A-IA-A-A-IA-A-IA-IA into said data symbol; and modulating the data symbol in which said reference symbol is inserted to radio frequency signals (abstract, col. 4, lines 11-21, 41-43, 51-55, col. 5, lines 23-26, 48-54, col. 6, lines 57-59).

Dolle et al. does not explicitly disclose a definite synchronization pattern sequence. However it is well known in the art that a pattern sequence can be arranged in many different ways. Therefore it is obvious that different pattern sequences can be arranged in multiple ways as a matter of the users design choice.

(2) With regard to claim 2, claim 2 inherits all the limitations of claim 1. Dolle et al. further discloses wherein said step of modulating the data symbol comprises conducting the modulation according to the orthogonal frequency division multiplexing (OFDM) system. (col. 4, lines 11-23).

(3) With regard to claim 3, claim 3 inherits all the limitations of claim 1. Dolle et al. further discloses inserting the reference symbol in which multiple synchronizing patterns are aligned in time series in order to contain the structure of A-IA-A-IA-IA-A-IA-A-A into said data symbol (col. 4, lines 52-55).

(4) With regard to claim 4, claim 4 inherits all the limitations of claim 3 and 2.

Dolle et al. further discloses wherein said step of modulating the data symbol comprises conducting the modulation according to the orthogonal frequency division multiplexing (OFDM) system (col. 4, lines 11-23).

(5) With regard to claim 5, inherits all the limitations of claim 1. Dolle et al. further discloses inserting the reference symbol in which multiple synchronizing patterns are aligned in time series in order to contain the structure of IB-IB-IB-IB-B-B-B-IB into said data symbol (abstract, col. 4, lines 11-21, 41-43, 51-55, col. 5, lines 23-26, 48-54, col. 6, lines 57-59).

(6) With regard to claim 6, claim 6 inherits all the limitations of claims 5 and 4. Dolle et al. further discloses wherein said step of modulating the data symbol comprises conducting the modulation according to the orthogonal frequency division multiplexing (OFDM) system (col. 4, lines 11-23).

(7) With regard to claim 7, claim 7 inherits all the limitations of claim 5. Dolle et al. further discloses inserting the reference symbol in which multiple synchronizing patterns are aligned in time series in order to contain the structure of B-B-B-B-IB-IB-IB-IB-B into said data symbol (abstract, col. 4, lines 11-21, 41-43, 51-55, col. 5, lines 23-26, 48-54, col. 6, lines 57-59).

(8) With regard to claim 8, claim 8 inherits all the limitations of claims 7 and 6. Dolle et al. further discloses wherein said step of modulating the data symbol comprises conducting the modulation according to the orthogonal frequency division multiplexing (OFDM) system (col. 4, lines 11-23).

(9) With regard to claim 9, claim 9 inherits all the limitations of claim 1. Dolle et al. further discloses modulation means for modulating the data symbol in which said reference symbol is inserted to wireless frequency signal (col. 7, lines 66-67).

(10) With regard to claim 10, claim 10 inherits all the limitations of claim 5. Dolle et al. further discloses modulation means for modulating the data symbol in which said reference symbol is inserted (col. 4, lines 24-27).

(11) With regard to claim 11, claim 11 inherits all the limitations of claim 1. Dolle et al. further discloses a communication device comprising an antenna for receiving/transmitting the modulated signal; and synchronization detection means for obtaining the correlation value between the reference symbol of the signal received and the delayed reference symbol and detecting the synchronization (abstract, col. 1, lines 4-7, col. 2, lines 11-19, col. 7, lines 18-19, 65-67).

Dolle et al. does not explicitly disclose an antenna for receiving/transmitting. However it is well known in the art that an RF front-end inherently requires an antenna to transmit and receive signals.

(12) With regard to claim 12, claim 12 inherits all the limitations of claim 5. Dolle et al. further discloses a communication device comprising an antenna for receiving/transmitting the modulated signal; and synchronization detection means for obtaining the correlation value between the reference symbol of the signal received and the delayed reference symbol and detecting the synchronization (abstract, col. 1, lines 4-7, col. 2, lines 11-19, col. 7, lines 18-19, 65-67).



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***Conclusion***

6. The prior art made record of and not relied upon is considered pertinent to applicant's disclosure:

a. Sakoda et al. US Patent 6088345 discloses a communication method, base station and terminal apparatus.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 703-305-8326. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

*Cicely Ware*

cqw  
April 26, 2004

  
**STEPHEN CHIN**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 2600**